nigo, who hold that the vessels of the retina are dilated after the use of inhalations of amyl. Ladendorf found that the temperature of the mouth was raised by half a degree C. during an inhalation. That this drug impedes the oxidation of the blood is universally admitted. He found that, out of thirty cases after inhalation of amyl, sugar appeared in the urine in twenty-four, and was totally absent in six. All traces of the sugar passed away entirely after three to six days. This appearance of sugar is supposed to be owing to the dilatation of the hepatic vessels. He admits that there are cases in which amyl is of no use in epilepsy, it promises most in those patients in whom the face becomes pale. Dr. Maragliano considers that the power this drug has in dilating the vessels of the brain (*la sua azione iperemizzante sul cervello*) is the cause of its therapeutic value in epilepsy.

Dr. Maragliano has made some very careful observations to ascertain the direct effect of the inspired nitrite of amyl upon the blood. He found that neither the size of the globules nor their number was affected by this drug.

The author sums up as follows:—

1. That the inhalation of nitrite of amyl methodically and persistently, and not with the view of cutting short impending attacks, causes a notable diminution of the violence and number of the epileptic seizures. This is proved by the three observations described, as well as several others in which the results were identical. The method employed by us is different from what is habitually followed, which was to cause the amyl to be inhaled after the beginning of the attack or after the aura came on in order to avert the fits. Hammond has tried the drug in much the same manner as ourselves without being able to report any benefit; but we using larger doses have obtained favourable results from the use of amyl. Some other observers have also reaped benefit, among them is Crichton-Browne, who however did not use the drug in the same fashion. He succeeded in eight cases out of ten in cutting short the status epilepticus in which fits succeeded one another without intermission, the patients remaining unconscious during the intervals.

2. That the dose of the nitrite of amyl may be raised without inconvenience to forty drops—the inhalations being prolonged for forty minutes and repeated from four to six times a day.

3. That the cerebral temperature is gradually raised from .3 to .8 of a degree C. during inhalation of the nitrite, on the cessation of which it again descends to the usual grade.

4. That the inhalation of nitrite of amyl in most instances causes the appearance of sugar in the urine amounting to from 1 to 2½ grammes in the twenty-four hours.—*Brain*, Jan. 1881.

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Nerve-extension in Locomotor Ataxy.

In the *Progrès Médical*, 1880, No. 50, Dr. BLONDEAU gives the following account of the recent successful performance of this operation:—

"At the end of one of his clinical conferences, Prof. Charcot presented a patient who excited the highest interest. This patient, from the service of Dr. Debove, of Bicêtre, is the subject of locomotor ataxy, upon whom the elongation of the left sciatic nerve has been practised with the view of relieving him of the incessant and atrocious shooting (*fulgurants*) pains from which he has long suffered. He is also the first patient upon whom this operation has been attempted in France.

"The elongation of the nerves in the subjects of ataxy is an operation of quite a recent date, and it is in Germany that it took its origin. The surgeons of that country, who for some years past have already treated various forms of neuralgia by elongation, and reckon a certain amount of success from the procedure, have probably been led to employ it in ataxy under the idea that the shooting pains may be regarded as a neuralgia arising from organic spinal lesion. However this may be, they have had recourse to this operation in three cases of ataxy, and have obtained either a cure or a notable amelioration. In the first case, due to Langenbeck, the two sciatic nerves were elongated, and then the two femoral, with the results of a disappearance of the pains and a cessation of motor incoördination. In the second case—that of Esmarch—the results were yet more brilliant; for, as a consequence of the elongation of the nerves in the axilla for the relief of the pains in the forearm, the motor incoördination entirely disappeared. In the third case (Erlenmeyer's) the result was not so satisfactory. The two sciatic nerves were successively elongated; but there followed only some slight increase in the strength of the patient, no change occurring in the disturbed sensibility or the motor incoördination.

"The results of these cases induced M. Debove to make a trial of the same means in a case in his service. The subject operated upon was an ataxic who had reached a very advanced stage of the disease, and who had kept the bed for eighteen months. The symptoms which he presented were as follows: violent shooting pains of an exceptional intensity, occupying the upper as well as the lower limbs, and preventing sleep. He never passed twenty-four hours without these pains manifesting themselves, injections of morphia having been employed for their relief until the dose of sixteen centigrammes was reached. Gastric, urethral, and vesical crises occurred about every eight days; and there was motor incoördination, which was limited to the lower extremities, the patient being quite unable to maintain himself erect, and sinking down upon himself when the attempt was made to make him walk by supporting him under the arms. There was an absence of tendon reflex on both sides. Very marked myosis of the two pupils existed, but was unoccupied by any disturbance of vision. Cutaneous sensibility was diminished, but there were no patches of anæsthesia. The notion of the position of the lower extremities was lost. Dr. Gilette, on November 18, laid bare the left (chosen because the pains were most violent on that side) sciatic nerve at the middle of the posterior part of the thigh, and seizing it with his fingers, elongated it twice suddenly and violently. Antiseptic dressing was then applied. Chloroform was not employed, because physiological experiments have shown that when a nerve is violently pinched there is a momentary arrest of the respiration and circulation; and it was feared that any such arrest might prove dangerous to a subject under chloroform. In spite of this, the operation was not very painful, which may be attributed to the influence of the morphia with which the patient was saturated. He himself declared that he did not suffer a hundredth part of what he suffered during his crises. The results obtained are most remarkable. The shooting pains have quite ceased, and the muscular incoördination has almost disappeared, the tendon reflex, however, is still absent, and the pupillary myosis continues. These results, Prof. Charcot, as is his custom, rendered visible and palpable to his auditors. The patient was brought in on a litter, and, as requested, raised one or other of his limbs alternately. Prof. Charcot having placed his hand about sixty centimetres above the patient, the latter, almost without hesitation, touched it several times with the point of his foot. Two assistants supported the patient in the erect posture, and he was able to maintain this without oscillating, and even to make a few steps.

"What has been the mode of action under these circumstances? Has the spinal centre or the nervous system been acted upon? At present this is not known, and, as Prof. Charcot observes, it is of little consequence. What we should realize is the fact that elongation—if the results thus far obtained are confirmed—is an operation destined to render the unfortunate subjects of ataxy invaluable services. But we should guard ourselves against unreflecting enthusiasm, and not, basing our procedures on these successful cases, perform elongation in all examples of the disease. This would be to carry our aim too far, and it is necessary that we should act with prudence and scientifically, operating only when real indications are present."

Reporting on this case at a later period (*Progrès Méd.*, No. 52), and referring to another case also occurring in Dr. Debove's practice, Dr. D'Olier says:—

"We have seen this week at Bicêtre the patient whom Prof. Charcot exhibited to his class at Salpêtrière. This man, who for years past had suffered horrible pains in his lower extremities, scarcely attenuated by large doses of morphia, has not felt since the elongation—that is, for about a month—the slightest shooting pains either in the lower or upper extremities, and the gastric disturbances from which he suffered have entirely disappeared. Moreover, the motor incoördination has slmost entirely disappeared on both sides.

"On December 16, Dr. Debove, in accord with Dr. Gilette, made another trial upon a subject of ataxy, who, encouraged by the cure of his comrade in misery, demanded an operation for himself, he being the victim of incessant shooting pains, with exacerbation, and affecting both upper extremities. Dr. Gilette having laid bare the right radial and median nerves, passed a sound beneath them with its convex side towards the nerves. Then the instrument being held by its two ends, tractions were made perpendicularly to the axis of the nerve with sufficient force to raise the latter five or six centimetres. With respect to these tractions it may be observed that there is no fear of rupturing the nerve during their employment. Some experiments made on the dead body have shown that a force of forty-two kilograms is necessary to rupture the radial, the tractions made on the living subject being far below this figure. In this patient, as in the other, the shooting pains have considerably diminished in the right upper extremity, and have disappeared in the left extremity and in the lower limbs. The plantar anæsthesia has much diminished on the left side, and motor coördination has been much improved. Walking without support has become possible. The patient has recovered regular sleep, and refuses the aid of morphia, declaring that his pains are nothing to those which he endured before.

"The result of these two operations is sufficiently remarkable to be carefully noted. If the procedure is only a palliative, which, according to all probability, does not arrest the progress of the ataxy, these two examples prove at least its efficacy against two of the important symptoms of the disease—pain and disturbances in motor power, and perhaps also those of sensibility."—*Med. Times and Gazette*, Jan. 22, 1881.

Langenbuch and Esmarch have described two cases of tabes treated by nerve-stretching. The idea was to relieve the patients of their acute pains; and not only did the result justify the keenest hopes entertained on that score, but, to the astonishment of all concerned, the ataxy itself was greatly reduced by the operation. ERLENMEYER discusses these cases and their various bearings, and contributes another instance of nerve-stretching in an advanced case of tabes. The patient had passed through the period of shooting-pains, and had entered upon the third, or paralytical, stage of the disease. The ataxia was excessive, the muscular sense absolutely lost, the bladder paralyzed. The most energetic treatment, including anti-syphilitic courses, had failed to effect any improvement. On June 22, 1880, the right sciatic nerve was exposed by means of an incision over the sciatic notches (Erlenmeyer considers it advisable to operate as near the centres as possible). Lister's method was followed, and the wound healed by first intention. On July 3, the left sciatic was stretched. At this time the right leg had distinctly gained in strength, but the ataxy was not notably diminished. The healing of the wound on the left side gave some trouble, on account of some erysipelatous complications. On the 16th of August, the patient could stand alone against a wall, which was previously impossible, and may be considered as a proof of a gain of strength. The ataxy remains much the same; but the remnants of the shooting-pains, which atmospheric vicissitudes always aroused, have disappeared.

The comparative failure in his case is attributed by Dr. Erlenmeyer to the insufficient force exerted in stretching the nerves. But this method of treatment in locomotor ataxy, especially at an early stage, ought to be put to the test in a systematic manner. If possible the amount of traction necessary to produce the beneficial effects should be determined objectively by means of weights, or some other means of measurement.—*Brain*, Jan. 1881, from *Centralblatt für Nervenheilkunde*, No. 21, 1880.

On Tendon-Reflex.

An interesting paper has been written by Dr. H. SENATOR on the physiological relations of the phenomenon known as tendon-reflex. A sharp blow on the tendon of the patella, when the legs are crossed, will cause the leg to be raised by the sudden contraction of the quadriceps extensor femoris, and a movement of the feet can be induced by a similar blow applied to the tendo Achillis. Tschirjew has shown that in the rabbit the centre for the reflex act in the patellar-reflex is situated between the fifth and sixth lumbar vertebræ, the afferent fibres proceeding from the tendon, and not, as Joffroy maintained, from the skin. These fibres run in the crural nerve, the division of which puts an end to the phenomenon. Senator corroborates Tschirjew's statement that division of the spinal cord opposite the fifth or sixth lumbar vertebra abolishes patellar tendon-reflex. He finds, further, that division of one lateral half of the spinal cord at this level abolishes the reflex on the corresponding side only. There is, therefore, no decussation of the nerve fibres. Division of the lateral column on one side produces the same effect. Division of the posterior cornua of the gray substance does not abolish the tendon-reflex. He concludes that in this part of the lumbar region both the sensory and motor fibres of the posterior extremities are exclusively contained in the lateral columns of the cord. It is remarkable that the patellar tendon-reflex can only be induced by one kind of stimulation—namely, mechanical shock or sudden extension by a blow. Neither electric, chemical, nor thermic stimuli have any effect. Nor has such stimulation as can be applied by pricking, cutting, or pressure. Senator discusses the views of Tschirjew in regard to its presence in health and disease, and appears to think that it is not always demonstrable in health, and not always absent in ataxy.—*Lancet*, Feb. 12, 1881.

Suppuration of an Enlarged Thyroid.

Spontaneous suppuration of a goitre is one of the least common terminations. An instance in which this occurred during the course of an attack of typhoid fever has lately been recorded by M. WEILL, from Jaccoud's wards. The patient was a man, aged twenty-two, who had a goitre of moderate size and firm consistence. He had lived until within four months in a district where goitre is endemic. The attack of typhoid fever ran a normal and mild course. The day after the temperature had become natural, he complained of severe pain in the neck, and the surface of the goitre was observed to be reddened. During the next day the redness and size of the goitre increased, and its consistence diminished, until distinct fluctuation was perceptible. A week later it was incised, and a large quantity